

unpatentable over Hay, U.S. Patent No. 4,523,169 in view of Yagi, JP 60-178609. Reconsideration of these rejections is requested for the following reasons.

Applicants have amended claims 10 and 11 to correct the typographical error with respect to the secondary coil being wound on the primary coil. Further, each of these claims has been amended to set forth that the primary coil is of a copper conductor material, and that the secondary coil is of an aluminum conductor material. Antecedent support for the change is found on page 6, lines 2-6 of the specification, for example.

In the 35 U.S.C. § 112, second paragraph rejection, the Examiner requests clarification with respect to the claim limitation regarding the amount of heat generated by a current flowing through the primary coil in comparison to that generated by current flowing through the secondary coil. This limitation finds support in the specification on page 17, lines 25-27, for example, which explains that the calorific value generated in the primary coil is greater than that in the secondary coil. Further, the specification states that the magnetic cores serve as a coolant to absorb the heat generated from the primary coil. See page 17, line 28 - page 18, line 3 of the specification. Therefore, the limitations set forth in claim 10 are supported by the specification,

which adequately explains the invention to one having ordinary skill in the art. Therefore, the 35 U.S.C. § 112, second paragraph rejection of claim 10 should be withdrawn.

With respect to claim 11, the limitations regarding the value of current density of the primary coil being greater than the value of current density of a secondary coil are supported by the specification. For example, see page 20, lines 2-16 and page 6, lines 7-10 of the specification. Also, page 17, lines 21-25 set forth that the primary coil has a higher current density than that in the secondary coil when calibrated into the current density of an aluminum conductor. Therefore, the limitations of claim 11 are supported by the specification, which adequately explains the invention to one having ordinary skill in the art and as a result the 35 U.S.C. § 112, second paragraph rejection of claim 11 should be withdrawn.

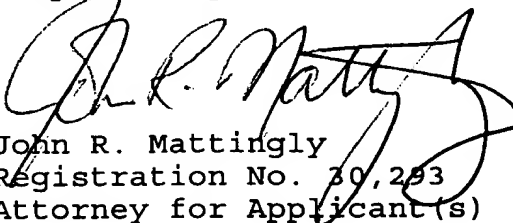
The reference to Hay has been cited for disclosing a three phase transformer that discloses the invention as claimed, except for the arrangement of the primary and secondary windings. However, Applicants respectfully assert that Hay does not show the invention as claimed. Hay shows an air-cooled transformer having a plurality of air ducts with a space between the ducts that has good heat conduction. There is no disclosure of the heat generated in the primary coil or

the current density of the primary coil being greater than the corresponding heat generated in the secondary coil or current density of the secondary coil, as claimed by Applicants. The Examiner has stated that this limitation is functional, however, the claims have been amended to further set forth that the primary and secondary coils are of different conductor materials, and therefore the limitations of the amount of heat generated or the value of current density for each of the primary and secondary coils should be considered in distinguishing the invention from the art of record.

In Yagi, which is relied upon for disclosing primary and secondary windings that are co-axially wound on a core, there is no disclosure or suggestion of the claimed combination of claims 10 and 11. In particular, Yagi discloses the limitation of the amount of heat generated and the value of current density being different for the primary and secondary coils in combination with the primary and secondary coils being of different conductor materials, respectively. Therefore, the 35 U.S.C. § 103(a) rejection of claims 10 and 11 over Hay and Yagi should be withdrawn.

In view of the foregoing amendments and remarks,
reconsideration and reexamination are respectfully requested.

Respectfully submitted,



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MARKED UP VERSION OF AMENDED CLAIMS

10. (Amended) An amorphous metal core transformer comprising:

a magnetic core composed of a plurality of amorphous metal strips;

a primary coil of a copper conductor material wound on said magnetic core; and

a secondary coil [would] of an aluminum conductor material wound on said primary coil and disposed outside said primary coil in a radius direction of said primary coil, wherein

an amount of heat generated by a current flowing through said primary coil is greater than an amount of heat generated by a current flowing through said secondary coil, so that the heat generated from the primary coil is dissipated in said magnetic core and in said secondary coil.

11. (Amended) An amorphous metal core transformer comprising:

a magnetic core composed of a plurality of amorphous metal strips;

a primary coil of a copper conductor material wound on said magnetic core; and

a secondary coil [would] of an aluminum conductor material wound on said primary coil and disposed outside said

primary coil in a radius direction of said primary coil,
wherein

a value of current density of said primary coil is
greater than a value of current density of said secondary
coil, and said value of current density of said primary coil
is indicated in terms of the current density of the aluminum
conductor winding.